

Terms of Reference (ToR): Technical Officer for SREP-Supported Extended Biogas Project

1. Introduction

Nepal is one of six pilot countries identified for assistance under the Scaling-up Renewable Energy Program in Low Income Countries (SREP) by the SREP sub-committee. As one of three programs under the Strategic Climate Fund, SREP aims to demonstrate the social, economic and environmental viability of low carbon development pathways in the energy sector. In particular, the objectives of SREP in Nepal are to: (i) leverage complementary credit and grant co-financing, (ii) bring about transformational impacts through scaling up energy access using renewable energy technologies (RETs), poverty reduction, gender and social inclusiveness and climate change mitigation, and (iii) ensure sustainable operations through technical assistance and capacity building. The Government of Nepal (GoN) has designated the Ministry of Finance (MoF) and the Ministry of Energy, Water Resources and Irrigation (MoEWRI) as the focal points for SREP. MoEWRI has designated the Alternative Energy Promotion Centre (AEPC) as the lead agency for SREP-related activities. The Waste to Energy under SREP is considered a sub activity of Renewable Energy and hence the SREP supported projects are part of the Government's program activity, and is being implemented by AEPC.

The SREP- Supported Extended Biogas Project, one of the SREP components aims to promote large off-grid biogas energy generation in the country where sponsors are commercial enterprises or municipalities. SREP seeks to deliver two primary categories of benefits from the use of its financial support: (i) increased access to renewable energy and (ii) increased production of renewable energy. The project consists of two components; Technical Assistance and Financing of Investments.

2. Background

Waste to energy in municipalities and Commercial Entities has been proven as a viable business in many places around the world. SREP plans to introduce waste to energy technologies in the municipalities and Commercial Entities of Nepal. Studies have shown that the Nepalese municipal and Commercial waste contains 60 to 70% biodegradable waste. The potential of producing biogas from the municipal and commercial waste in Nepal is huge. A Technical Officer is required to encourage municipalities and Commercial developers to invest in waste to energy projects.

The Technical Officer for municipal and commercial shall have frequent visits to the municipalities and Commercial Entities around the country to conduct outreach activities, awareness creation and meetings with municipality and commercial Entrepreneurs authorities and potential developers.

The production of biogas from biodegradable waste for heating and electricity generation to feed into the grid has become common practice in developed countries. Such practice could be transferred to low income countries like Nepal as well. This will be the larger size of the plants as AEPC has some experience with the private sector entities and communities. But due to lack of adequate skill, technology and resources AEPC has not been able to accelerate such plants in desired manner. In industrialized countries with rich experience in waste management, incineration is recognized as the single most effective method for municipal solid waste (MSW) treatment as it reduce waste value by 90% and eliminates methane emission. However, the waste in South Asia including Nepal is characterized by a significantly higher density and moisture. The current and future waste treatment is greatly affected not only by population growth and consumption patterns, but also by the policies of the government, applicable funding from private and public sectors and community social awareness. The municipality waste could be used in large municipal biogas plants.

Biogas promotion is seen as a comparatively successful and lucrative business in rural Nepal. In the urban and semi urban areas, a huge resource for biogas production is being wasted. Kathmandu city, for example, produces 660 g of solid waste per capita per day with 71% of organic waste. Landfill being the only destination of Municipal Solid Waste (MSW) in Kathmandu and most of the other big cities of Nepal, it is creating huge environmental problems. Production of biogas from municipal waste is an option to mitigate the ever growing demand for energy in Nepal. This waste has the potential to be converted into wealth by means of biogas which can contribute to energy production as a renewable energy source.

A set of guidelines for conduction of feasibility study and detailed feasibility study for municipal/Commercial biogas plants have been prepared. Similarly, reporting formats for feasibility studies have been prepared.

The Bio Energy Section is looking for a dynamic Technical Officer to help the program create a proper market and enhance the productive applications of large biogas plants in different municipalities and Commercial Enterprises. For the promotion of municipal and commercial waste to energy (large scale municipal/Commercial biogas plants), development of various output based business models shall be prepared by assigned Expert. Once waste to energy promotional materials are prepared, one to one meeting with prospective municipalities and Commercial Enterprises presentation of such business models will be done to convenience the concerned authority. This activity will be lead by this position whereas for commercial project, promotional workshop targeting to certain region/cluster of industries is suitable that shall be dealt by separate officer.

3. Objective

To liaise with selective municipalities and Commercial Entities potential large biogas developers and create a market for large biogas plants utilizing municipal and commercial waste as primary feedstock.

4. Scope of Work (activities)

The scope of work shall include following, but shall not necessarily be limited to the following:

- Identifying municipal and commercial project cases.
- Technical Design of the projects.
- Prepare content for large biogas business models including financial analysis
- Build network with municipalities/ Commercial Enterprises and coordinate with suitable to implement waste to energy projects.
- Conduct programs to attract potential developers and municipalities to invest in waste to energy activities.
- Assist the Bio Energy Section and the large biogas sector/team in day to day activities related to waste to energy including budgeting, planning and design and execution of activity plans.
- Regularly ensure adequate follow-up, monitoring and reporting of program activities through active coordination with monitoring and reporting team.
- Disseminate information to companies and other relevant organizations or individuals.
- Assist in regular and general monitoring of the program activities, including Review of work and activity plans, and budget and work closely with staff related with monitoring and reporting; Gender and Social Inclusion (GESI) mainstreaming; and climate and carbon.
- Assist Senior Bio Energy Expert for overall execution of the SREP sub projects.
- Ensure GESI issues are addressed in executing program activities.
- Work in close cooperation with other programs of AEPC and other rural energy programs/projects of AEPC and ensure teamwork and coordination.
- Coordinate with other on-going programmes in Nepal that has direct and indirect implication with SREP activities in general and biogas activities in specific: general liaison for sector development; follow-up of the technological and other developments in the sector and providing inputs to improve the program.
- Any other tasks assigned by Project Manager to support in SREP implementation.

5. Performance and Reporting Requirement (Deliverables)

On this program, The Technical Officer takes key implementation responsibility to reach the targets of accelerating the waste to energy projects service delivery in different

municipalities and commercial entities around the country with better quality, comprising various technologies leading to more equitable economic growth via promotion of waste to energy technologies. The deliverables shall be but not limited to the following:

- Market development plan for large biogas in selective municipalities and Commercial Entities.
- Ensure that the targeted large biogas and waste to energy municipal and commercial projects are concluded within the SREP period.
- Conduction of outreach activities that attract developers to invest in large biogas plants in municipalities and Commercial Enterprises of Nepal
- Ensure that MOUs are signed between municipalities and Commercial Enterprises private sector.
- Reports of potential clients of large biogas plants.
- Promotional materials for large biogas and waste to energy technologies.
- Memos and minutes as and when deemed necessary
- Match making events between national/international technology providers and consultants/contractors

6. Duration of Service

The Officer will be assigned for the project period, i.e. 31st August, 2021 with a provision of renew of contract, in case of satisfactory performance. The officer is expected to work full time during office hours within Kathmandu valley with required travels outside Kathmandu valley within Nepal on project related matters.

7. Office's required Qualification and Experience

Candidate should have at least Bachelor's degree in Engineering in the civil, mechanical/chemical/agriculture/environmental or related discipline with minimum 3 years experience in total and 2 years experience in energy sector.

The candidate should also have:

- Demonstrated skills in practical marketing and coordination, business plan preparation and networking are required.
- Demonstrated experience on working with different associations, municipalities in Nepal would be an advantage.
- Experience in designing and implementing private sector capacity building and in training national and sub-national staff.

- Ability to build and maintain relationships, particularly interacting productively, proactively, and comfortably with municipality staff, community leaders, government agencies, NGOs, private sector groups.
- Demonstrated strong written and oral communication, interpersonal and negotiation skills.
- Demonstrated computer skills in Microsoft Office Suite applications including Word, Excel, PowerPoint, and Outlook.
- Output/result and team work oriented
- Participated in relevant trainings
- Strong written and oral presentation skills in English and Nepali are required.

8. Facilities and logistics to the expert by the Client:

The Expert will be provided with the office space, computer with internet facilities, and office furniture. Necessary stationery, printing and copying facilities will also be provided by the Client.